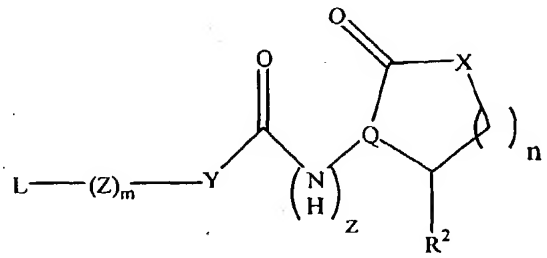
Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1-15 (canceled)

16. (original) A method for detecting a Gram negative bacteria autoinducer in a sample comprising adding to the sample an antibody in which the antibody specifically binds the autoinducer of a Gram negative bacteria of a compound of Formula (I):

(I)



where X is O, S, N-(C_1—C_6) alkyl, NR^2, N-phenyl; Y is C_1—C_6 straight or branched alkyl, C_1—C_6 straight or branched alkenyl, C_1—C_6 straight or branched alkynyl; Z is C=O, C=S, CHOH, C=N-NR^1, C=N-OH, C_1—C_8 straight or branched alkyl, C_1—C_8 straight or branched alkenyl, C_1—C_8 straight or branched alkynyl; L is C_1—C_{18} straight or branched alkyl, C_1—C_{18} straight or branched alkenyl, C_1—C_{18} straight branched alkynyl, or —CO_2H, —CO_2R^1, —CHO, —C≡N, —N=C=O, —N=C=S, OH, OR^1, —CH=CH—CH_2Br, —CH=CH—CH_2C1, —SAc or SH, where R^1 is C_1—C_6 straight or branched alkyl, m is 0 or 1; z is 0 or 1; R^2 is H, C_1—C_6 straight or branched alkyl, C_1—C_6 straight or branched alkenyl or C_1—C_6 straight or branched alkynyl, or CO_2H; and Q is CH or N; and n is 0-3 with the proviso that when n is 0, X is N—(C_1—C_6 alkyl) or N-phenyl.

17. (currently amended) The method according to claim 16 wherein the autoinducer is produced by a Gram negative bacteria comprising *Aeromonas hydrophila, Agrobacterium* <u>*tumefaciens*</u> ~~*tumetaciens*~~*, Burkholderia cepacia, Chromobacterium violaceum, Enterobacter agglomerans, Erwinia stewarti, Erwinia carotovora, Escherichia coli, Nitrosomas europea, Photobacterium fischeri, Pseudomonas aeruginosa, Pseudomonas aureofaciens, Rhizobium leguminosarum, Serratia liquefaciens*, or *Vibrio harveyi.*

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known bacterial autoinducers (BAIs) and the Gram negative bacteria which produce them are identified in Table 1 below:

Examples of Autoinducers

Table 1

Gram negative bacteria:	Bacterial autoinducer (BAI):
Aeromonas hydrophila	AHAI
Agrobacterium tumefaciens	N-(3-oxo)-octanoyl -L-homoserine lactone (OOHL)
Burkholderia cepacia	N-octanoylhomoserine lactone
Chromobacterium violaceum	N-hexanoyl-L-homoserine lactone (HHL)
Enterobacter agglomerans	N-(3-oxo)-hexanoyl-L-homoserine lactone (OHHL)
Erwinia stewarti	OHHL
Erwinia carotovora	OHHL
Escherichia coli	Structure not yet determined
Nitrosomas europea	OHHL
Photobacterium fischeri	OHHL, OOHL; OHL
Pseudomonas aeruginosa	N-(3-oxododecanoyl)-L-homoserine lactone (PAI-1);
	N-(butanoyl)-L-homoserine lactone (PAI-2)
Pseudomonas aureofaciens	Structure not yet determined
Rhizobium leguminosarum	N-(3-hydroxy)-tetradecanoyl-L-homoserine lactone (HtDeHL)
Serratia liquefaciens	PAI-2 (N-butanoyl-L-homoserine lacton
Vibrio fischeri	OHHL
Vibrio harveyi	N-(3-hydroxy)-butanoyl-L-homoserine lactone (HBHL)
Yersinia enterocolitica	OHHL, HHL

The Gram negative bacterium *Pseudomonas aeruginosa* is an opportunistic human pathogen that causes infections in immunocompromised hosts. PAI-1 has been shown to inhibit the proliferation of lymphocytes *in vivo* and downregulates expression of tumor necrosis factor and interleukin-12 (Telford et al., 1998, Infect Immun. 66(1):36-42). *Pseudomonas aeruginosa* frequently colonizes the lungs of individuals with cystic fibrosis